AMENDMENTS OF CLAIMS
compliant with 37 CFR 1.121 (changed 7/3/03)

Three pages. Claim 14 is currently amended.

1. (original) In a process for producing a product using a material which is electrochemically loaded with second material, a method of monitoring the loading within said material that comprises:
loading said second material,
mechanically coupling said material so as to enable a mechanical vibration of said material,
providing means to drive said vibration, and
providing means to follow the frequency of said vibration.

2. (original) A process as in claim 1 wherein the frequency of said vibration is followed by the material producing interference with an optical beam

3. (original) A process as in claim 1 wherein said material is a member of the group consisting of palladium and palladium alloys.

4. (original) A process as in claim 1 wherein said second material is a member of the group consisting of deuterium or deuterons.

5. (original) A process as in claim 1 wherein said means to provide drive of said vibration comprises coupling said material to a second mass located external to said material.

6. (original) A process as in claim 5 wherein said second mass is an electromechanical device capable of a vibration.

7. (original) A process as in claim 1, where the material is loaded as an electrochemical cathode.

8. (original) In a process for loading a material with a second material, a method of monitoring the loading within said material that comprises:
loading said second material,
mechanically coupling said material so as to enable a mechanical vibrations of said material,
providing means to produce said vibrations,
providing means to detect the frequency of said vibrations.

9. (original) A process as in claim 8, where the material is loaded electrochemically.

10. (original) A process as in claim 8 wherein the frequency of said vibration is followed by the material producing interference with an optical beam.

11. (original) A process as in claim 8 wherein said material is a member of the group consisting of palladium and palladium alloys.

12. (original) A process as in claim 8 wherein said second material is a member of the group consisting of deuterium or deuterons.

13. (original) A process as in claim 8 wherein said means to drive said vibration is provided by additional coupling also to a longitudinal mass capable of providing restoring force along its length,

14. (currently amended) A process as in claim 8 wherein said means to drive said vibration comprises coupling said loaded material as a first mass to a second mass located external to said material.

15. (original) A process as in claim 14 wherein said second mass is capable of having at least one vibrational frequency.

16. (original) A process as in claim 14 wherein said second mass is driven by an electromechanical device .

17. (original) An apparatus to monitor the loading of a material by a second material which includes in combination:
means to load said second material,
means to enable mechanical vibrations of said material by mechanically coupling said material,
means to drive said vibrations,
means to detect the frequency of said vibrations.

18. (original) An apparatus as in claim 17 wherein said material is a member of the group consisting of palladium and palladium alloys.

19. (original) An apparatus as in claim 17 wherein said second material is a member of the group consisting of deuterium or deuterons.

20. (original) An apparatus as in claim 17 wherein said means to load said second material in the material is electrochemical.